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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/750,668	12/29/2000	Ali N. Saleh	M-7165-5P US	7626
33031	7590	07/06/2006	EXAMINER	
CAMPBELL STEPHENSON ASCOLESE, LLP 4807 SPICEWOOD SPRINGS RD. BLDG. 4, SUITE 201 AUSTIN, TX 78759			NGUYEN, HANH N	
			ART UNIT	PAPER NUMBER
			2616	

DATE MAILED: 07/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/750,668

Applicant(s)

SALEH ET AL.

Examiner

Hanh Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Amendment filed on 6/19/06.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-150 is/are pending in the application.
- 4a) Of the above claim(s) 47-112 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-46 and 113-150 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

The amendment filed on 6/19/06 has been accepted. Examiner acknowledges that the status of claims are as follows:

Claims 1-150 are now pending, of which claims 47-112 are withdrawn; claims 1-46 and 113-150 are under consideration. Claims 147 and 150 have been considered and rejected under 103 rejection under Bental et al. reference.

Claims 148 and 149 depends on withdrawn independent claims 47 and 81. Applicant is required to amended their dependency (of claims 148 and 149). However, the claims 148 and 149 have been considered.

Claim 1 is amended as “dynamically identifying a plurality of nodes with resources **as a result of said broadcast**”, which is believed by applicant that it is not disclosed in the cited art. Examiner does not agree because Bental et al. discloses, in fig.4, that the alternative routes with spare capacity are determined (steps 112 and 113) in response to / after a route has failed (step 110). The network restoral in fig.4 occurs in sequence such that a route in the network is failed (step 110), then a failure message is transmitted to adjacent nodes (chooser nodes) next to the failed part (step 111). At the chooser nodes, the failure messages are forwarded to all tandem nodes to determine possible alternate routes (step 112) with sufficient capacity (step 142, fig.9). See col.5, lines 62 to col.6, line 10.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-6, 10-47, 54, 58, 62, 73, 81, 86, 90, 94, 105, 113-150 are rejected under 35 USC 103(a) as being unpatentable over Bentall et al. (US pat. 6,282,170 B1) in view of Croslin et al. et al. (US pat. 5,737,319).

In claims 1, 47, 81, 113, 146, Bentall et al. discloses a method for restoring a virtual path (select a restoration route) in an optical network (see abstract and col.6, lines 35-37; col.3, lines 25-30), the method comprising broadcasting a plurality of resource request packets to a plurality of nodes in the optical network (fig.3, step 100; col.5, lines 48-52; sending messages along alternate routes to determine capacity of each link of the alternate routes through a network); dynamically identifying a plurality of nodes with resources, as a result of said broadcasting, necessary to support the virtual path (see col.3, lines 8-15; interrogate nodes on the routes to gather information on possible routes without a need to have preplanned routes); dynamically determining an alternate physical path comprising ones of the nodes with resources (fig.4, steps 113 & 114; select one of the alternative routes and allocate capacity on this selected alternative route; see col.5, line 62 to col.6, line 5); configuring the alternate physical path by establishing a communication connection between the nodes with resources (fig.9; step 142; col.8, lines 15-18; a shortest route with sufficient capacity is acknowledged to the sender); and restoring the virtual path by provisioning the virtual path over said alternate physical path (see fig.11, col.9, lines 35-45; sender re-routes the virtual path along the selected route when the route acknowledgement is received).

Even though Bentall et al. does not explicitly disclose dynamically determining an alternate physical path; but Bental discloses the nodes are interrogated to gather information for possible routes without having to preplan for preferred routes (see col.3, lines 8-15). In order to show that dynamically determining an alternate physical path is a well-known skill in the art, Croslin disclose, in its Relate Art, col.1, lines 50-65 and col.2, lines 40-47, that if a transmission segment suddenly become severed, dynamic network restoral application directs switching elements to select one of alternate transmission segments to replace the severed one, wherein the replaced transmission segment has enough resources to support the network transmission without disconnecting (dynamically identify nodes and dynamically determining an alternate path with sufficient resource). Therefore, it would have been obvious to one skilled in the art to apply the dynammic network restoral application of Croslin et al. with the network restoral of Bentall et al. so that network restoral is performed in real time and dynamically. The motivation is to avoid the dependend of the limit preplanned routes and reduce the time delay.

In claims 2 and 114, Bentall et al. discloses detecting a failure in the virtual path (fig.4, step 110; col.5, lines 60-65).

In claims 3 and 115, Bentall et al. discloses the detection of the failure is done by receiving a failure message packet (fig.8, step 130, receiving an alarm indication from OAM; col.7, lines 27-35); the nodes identification is done by acknowledging the failure message packet (fig.5, links used by appropriate virtual paths are identified by routing table in database 74 in response to alarm received from OAM 75; col.6, lines 50-55); and the determination of the nodes with resources is done by analyzing a response to the resource request

packets (fig.9; step 142; col.8, lines 15-20; acknowledge a shortest route by sending message back to the sender).

In claims 4-6, 116 and 117, the limitations of these claims have been addressed in claim 1.

In claims 10, 22, 36, 118, 126 and 137, Bentall et al. discloses restoring the VP (the restoration functions) is performed by the first node (fig.2; sender node 63), an intermediate node (chooser node 64; fig.2). See col.6, lines 20-25.

In claims 11, 23, 24, 37, 54, 62, 73, 86, 94, 105, 119, 127 and 138, Bentall et al. discloses the failure is a local physical port port between an intermediate node and an adjacent node; determining a different port of a link; initiating a physical port switch request; provisioning the VP to the different physical port (as addressed above in claim 1, a failure of a route connecting two nodes results in a new selected alternate route inherently changes the failed port associated with the failed route) and update the provisioning in the node data base (see fig.9, step 143; col.8, lines 20-25).

In claims 34, 45, 135, 144, Bental et al. discloses if said intermediary node receives a valid restore path request, updating path information in a node database (fig.9, step 143), allocating resources requested for said virtual path (fig.9, step 142), and forwarding said restore path request to all eligible adjacent nodes (fig.9, step 144).

In claims 35, 46, 136 and 145, Bental et al. discloses if the intermediary node receives an invalid restore path request, responding with a negative acknowledgment (fig.9, step 144; means that a node uses all resources to restore a failed VP until all VPs are block. Inherently, when VPs

are block due to insufficient resources, a Negative acknowledgement should be received; see col.8, lines 20-25).

In claims 12, 13, 14, 17, 18, 19, 25, 26, 38, 39, 58, 90, 120, 121, 122, 123, 124, 125, 128, 129, 139 and 140, the limitations of these claims have been addressed in claim 1.

In claims 30, 31, 33, 43, 44, 131, 132, 134, 142 and 143, the limitations of these claims have been addressed in claim 1.

In claims 15, 16, 20, 21, 28, 29, 41 and 42, Bental et al. does not disclose the first and the second predetermined time intervals are defined during provisioning of VP. Predetermining time intervals to restore failed VP is well-known in the art for purpose of detecting whether there is any available resources allocated for VP.

In claims 27 and 40, Bental et al. does not disclose if the response to the restoration request is not received within the predefined threshold times, releasing resources of VP. Inherently, the requested resource will be released after a predefined time has elapsed since the restoration request was sent. Therefore, it would have been obvious to set a predefined time to determine whether the resource for the VP.

In claims 147-150, with the limitations that have been discussed in claims 1 and 113, Bental et al. further discloses receiving an allocation request at a candidate node (see fig.10, step 149; receiving flood message from sender); if said resource necessary to support said virtual path is available on said candidate node, allocating said resource necessary to support said virtual path (see fig.10, step 153; tandem nodes reserves spare capacity for restoration process); forwarding said allocation request from said candidate node (see fig.10, step 154, tandem node broadcasts message on all links) (see col.8, line 65 to col.9, line 27), and, if said resource necessary to

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support said virtual path is unavailable on said candidate node, returning a negative response from said candidate node (see col.9, lines 30-35; if there is no capacity to be assigned, the tandem will pass the message to the chooser node to reflect that there is a lack of spare capacity).

Claims 7-9 are rejected under 35 USC 103(a) as being unpatentable over Bentall et al. (US pat. 6,282,170 B1) in view of Croslin et al. et al. (US pat. 5,737,319), and further in view of Chaudhuri (6,324,162B1).

In claim 7-9, Bental et al. does not disclose restoring of said virtual path is completed in less than 2 seconds; less than 250ms; and less than 50ms. Chaudhuri discloses the time required to determine restoration channel is 20-30 ms. Therefore, it would have been obvious to one ordinary skilled in the art to restore the failed VP in less than 2 seconds, 250ms, or 50 ms as needed in design system.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Burns et al. US pat. 6,490,245 B2);

Nishihara (US pat. 6,424,620 B1);

Abe et al. (US Pat. 6,108,304).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hanh Nguyen whose telephone number is 571 272 3092. The examiner can normally be reached on Monday-Friday from 8:30 to 4:30. The examiner can also be reached on alternate.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ahmad Matar, can be reached on 571 272 7488. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Hanh Nguyen



HANH NGUYEN
PRIMARY EXAMINER